# Mathew Lab Playbook

## Introduction

Welcome to the Mathew Lab in the Dept. of Biology at the University of Nevada, Reno. This Lab Playbook outlines the expectations, procedures, and culture that guide our research, teaching, and mentoring. It is designed to help all lab members succeed, ensure efficient operations, and foster an inclusive and productive environment.

## 1. Lab Culture & Expectations

### Commitment to Respect, Inclusion, and Collaboration

Our lab is a place where every member is treated with respect, kindness, and fairness. We value diversity of backgrounds, perspectives, and ideas, and believe that an inclusive environment fosters better science and stronger teamwork. Collaboration is central to our mission — we support one another's success, share credit generously, and contribute to maintaining a positive, professional, and supportive lab atmosphere.

### Working Hours and Flexibility Expectations

Research often requires persistence and focus, but we recognize that productivity does not always follow a strict 9-to-5 schedule. Lab members (especially graduate students and postdocs) are expected to maintain regular, reliable working hours that allow for collaboration and mentorship while balancing personal commitments. Core hours (e.g., 10 AM–4 PM) ensure availability for meetings and group work, while flexibility outside those hours is encouraged to support individual work styles and well-being. The emphasis is on **results and accountability**, not clock time.

### Authorship Policies and Conference Presentation Guidelines

Authorship reflects intellectual contribution and accountability. We follow established professional guidelines to determine authorship order and inclusion. Contributions in conception, data collection, analysis, writing, and revision all count toward authorship. Decisions regarding authorship will be discussed openly at the outset of each project and revisited as needed.

Students and postdocs are strongly encouraged to present their work at conferences. The PI will help identify suitable venues, provide feedback on abstracts and presentations, and, when possible, support travel through grants or departmental funds.

### Code of Conduct in Professional and Academic Interactions

We expect professionalism in all lab-related interactions — whether within the lab, in classes, at conferences, or online. This includes maintaining the integrity of data collection and reporting, respecting confidentiality, and accurately acknowledging contributions. Lab members are representatives of the University of Nevada, Reno, and our lab's reputation depends on the respect and professionalism each member demonstrates. Constructive feedback, open communication, and empathy are essential to our collective success.

## 2. Research Project Management

### Project Assignment Process and Timeline

Each lab member will be assigned to a research project based on their skills, interests, and the current priorities of the lab. Projects are typically discussed and confirmed in consultation with the PI to ensure alignment with grant goals and available resources. The goal is to balance independence with structured oversight — everyone owns their project, but no one works in isolation.

### Tracking Progress

We use store all pre-processed and processed data in the **Mathew Lab** folder in **Nevada Box**. Regular updates via **email** or **Slack** help the PI and other lab members stay informed, coordinate overlapping tasks (such as equipment use or data sharing), and provide timely support. Transparent progress tracking ensures accountability, prevents duplication of effort, and creates a record of productivity for both research reports and grant renewals.

### Milestones: Proposal, Data Collection, Analysis, Manuscript Drafting

Each project should follow a series of well-defined milestones:

1. **Proposal Development:** Clearly define the research question, methods, and anticipated outcomes.
2. **Data Collection:** Execute experiments or fieldwork according to approved protocols and safety guidelines.
3. **Data Analysis:** Conduct quantitative or qualitative analyses as appropriate, with clear documentation of methods.
4. **Manuscript Drafting:** Begin writing early, even while data are being analyzed, to maintain momentum and clarity. Reach out to me for any help with manuscript and figure preparations.

Progress toward these milestones will be reviewed regularly during lab meetings or one-on-one check-ins.

# 3. Communication

## Weekly Lab Meetings

We hold regular weekly lab meetings to share progress, troubleshoot challenges, and maintain a sense of community. Meetings typically include brief project updates from each member, discussion of technical or conceptual issues, and time for brainstorming or training. Attendance and participation are essential, as these meetings promote collaboration, accountability, and intellectual exchange across the group.

## One-on-One PI–Student Meetings Every 2–3 Weeks

In addition to group meetings, individual check-ins between the PI and each lab member occur approximately every 2–3 weeks. These meetings are used to discuss project-specific progress, career development, and any obstacles affecting productivity or well-being. These sessions are also a space for honest, supportive communication — a chance to celebrate successes, clarify expectations, and identify resources needed for continued growth.

## Response Time Expectations for Emails/Slack Messages

Timely communication is crucial for maintaining smooth laboratory operations. During normal workdays, lab members are expected to respond to emails or messages within 24 hours, even if only to acknowledge receipt and indicate when a full response will follow. Urgent matters (e.g., safety issues or time-sensitive deadlines) should be clearly flagged in the subject line or message. The PI will also strive to respond within a similar timeframe. **Slack** is the preferred medium for quick coordination, while email is reserved for formal or documented communication.

# 4. Data Management & Reproducibility

## File Naming Conventions and Shared Folder Structures

Consistency and clarity in file organization are essential for collaboration and data integrity. All lab members are expected to follow standardized file-naming conventions and store data in the **Mathew Lab** folder in **Nevada Box**. Each project should have a clearly labeled parent folder with subfolders for raw data, processed data, figures, scripts, and documentation. File names should include dates, version numbers, and concise descriptions (e.g., 2025-03-14_CellCount_v2.csv). Clear, consistent naming ensures that others can locate and understand files without confusion, even years later.

## Regular Data Backups and Version Control Protocols

To protect against data loss, all research data must be backed up regularly. Raw data should be stored in at least two secure locations — typically the shared lab drive and an institutional or cloud-based backup. Processed data and analysis scripts should use version control (e.g., GitHub) to document changes over time. Backups are the responsibility of both the individual researcher and the lab manager or PI, with quarterly checks to confirm data integrity. The goal is that no data, once collected, is ever lost or irretrievable.

### Documentation Standards for Reproducibility

Scientific integrity depends on reproducibility. Every dataset, figure, and result should be traceable to its raw source and accompanied by clear metadata explaining how it was produced. Analytical scripts, parameters, and software versions must be documented and saved with the data.

## 5. Safety & Compliance

### Required Safety Training and Certifications

All lab members must complete the University of Nevada, Reno's required safety and compliance trainings (https://www.unr.edu/ehs/training/lab-safety) **before beginning any laboratory work**. This includes modules on chemical hygiene, biosafety, hazardous waste management. Certificates of completion must be submitted to the PI or the designated Safety coordinator for the Mathew lab for documentation and renewal tracking. Refresher training should be completed as required by university policy. Safety is everyone's responsibility — no exceptions.

### Standard Operating Procedures (SOPs) for Lab Equipment

Our lab has a set of Standard Operating Procedure (SOP) that outlines correct operation, maintenance, and safety precautions while working in the lab. The SOPs are stored in a shared folder and in a physical binder within the lab for easy reference. Any malfunction, damage, or safety concern must be reported immediately to the PI or lab manager. Regular calibration and maintenance schedules are part of the lab's quality assurance plan.

### Emergency Procedures and Contact Information

Emergency preparedness is a critical part of lab safety. An updated emergency contact list — including the PI, lab manager, building safety officer, and UNR emergency services — is posted prominently in the lab and shared electronically with all members. The lab's evacuation routes, fire extinguisher locations, and first-aid kits are reviewed during onboarding. In case of spills, injuries, or other incidents, lab members must follow established reporting protocols and complete incident documentation within 24 hours. Everyone in the lab is empowered and expected to act quickly, calmly, and responsibly in an emergency. Safety always takes priority over research activity.

## 6. Mentorship & Professional Development

### Roles and Expectations for Undergraduates, Graduates, and Postdocs

Our lab welcomes members at various stages of their scientific journey, and each group plays a distinct yet complementary role.

- **Undergraduates** are introduced to the research process through structured projects under direct supervision. Their primary goals are to develop foundational technical and analytical skills, learn good research habits, and contribute to ongoing experiments.

- **Graduate students** lead independent research projects that align with the lab's broader goals. They are expected to develop hypotheses, design and conduct experiments, analyze data, and contribute to manuscripts and conference presentations.
- **Postdoctoral researchers** serve as senior scientists and mentors within the lab. They are encouraged to develop leadership skills by supervising students, contributing to grant proposals, and preparing for independent research careers.

Across all levels, professionalism, collaboration, and integrity are expected at all times.

### Career Development Support: Conference Presentations, Networking, CV Reviews

Our lab actively supports the professional growth of every member. Students and postdocs are encouraged to present their research at regional, national, and international meetings to develop communication skills and broaden their networks. The PI will provide feedback on abstracts, slides, and posters, and assist in identifying suitable venues and funding opportunities. Career development discussions—including CV and cover letter reviews, mock interviews, and advice on career paths within and beyond academia—are part of our mentoring culture. Networking within UNR and with external collaborators is strongly encouraged, as building professional relationships is key to long-term success in science.

### Encouragement of Fellowship and Grant Applications

Applying for fellowships and grants is an important part of professional development and scientific independence. Graduate students and postdocs are encouraged to apply for external funding such as NSF GRFP, NIH F32s. Undergrads are expected to apply for the Nevada Undergraduate Research Award (NURAs) and the NSF EPSCoR. The PI will provide guidance on identifying suitable opportunities, developing competitive proposals, and preparing budgets or supporting statements. Learning how to write and manage funding is a valuable career skill and an essential component of academic and professional success.

## 7. Accountability & Evaluation

### Productivity Benchmarks: Experiments, Manuscripts, Presentations

Productivity in the lab is measured not only by effort but by meaningful progress toward tangible outcomes. Benchmarks may include the completion of planned experiments, the generation and analysis of quality data, the preparation of manuscripts for publication, and participation in conferences or seminars. Productivity also includes maintaining accurate records, collaborating effectively, and contributing to the shared success of the research group.

### Process for Addressing Challenges and Providing Support

Challenges are a normal part of research and should be addressed early and constructively. If a project stalls or a lab member struggles with time management, communication, or experimental progress, the first step is an open discussion with the PI to identify underlying causes. Together,

we will develop a realistic action plan that includes specific milestones and support resources (e.g., skill training, scheduling adjustments, or peer mentoring). The goal is to provide guidance, not punishment, and to ensure that all lab members have the tools and structure needed to succeed.

## Closing Note

This Lab Playbook is a living document. It will be reviewed and updated annually to reflect changes in best practices, institutional requirements, and lab goals. All members are encouraged to provide feedback for improvement.